**Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Withdrawn) A method for characterizing a compound that prevents, inhibits or ameliorates cachexia in an animal, the method comprising the steps of:

(a) administering the compound to an animal with cachexia;

(b) comparing energy metabolism, food intake or motor activity in said animal with energy metabolism, lean body mass, food intake or motor activity in an animal with cachexia that is not administered the compound; and

(c) identifying compounds that prevent, inhibit or ameliorate cachexia when less fat or lean body mass loss or reduction in energy metabolism, food intake or motor activity is detected in animals to which the compound has been administered than in animals to which the compound has not been administered.

2. (Withdrawn) The method of claim 1, wherein cachexia is experimentally induced in the animal.

3. (Withdrawn) The method of claim 2, wherein cachexia is experimentally induced in the animal by administration of lipopolysaccharide or implantation of tumor cells or tissue.

4. (Withdrawn) The method of claim 1, wherein the compound is an MC-4 melanocortin receptor inhibitor.

5. (Currently Amended) A method of preventing or treating a pathological feeding behavior in an animal, the method comprising administering an effective amount of a mammalian melanocortin MC-4 receptor antagonist to an animal having a pathological feeding behavior ~~the animal~~.

6. (Original) The method of claim 5, wherein the pathological feeding behavior is

cachexia.

7. (Withdrawn) A method for characterizing a compound that prevents, inhibits or ameliorates cachexia in an animal and that is an antagonist of a mammalian MC4-R melanocortin receptor, the method comprising the steps of:

(a) providing a mammalian cell comprising a recombinant expression construct encoding a mammalian melanocortin receptor that is the MC-4 melanocortin receptor, wherein the mammalian cell expresses the melanocortin receptor encoded by the recombinant expression construct, or cell membranes prepared therefrom;

(b) contacting the cells or membranes prepared therefrom with an amount of an MC-4 melanocortin receptor agonist sufficient to produce a detectable amount of a metabolite produced in the cells that bind the agonist, in the presence and absence of a test compound to be characterized as an antagonist of the MC-4 melanocortin receptor;

(c) assaying the cells or membranes prepared therefrom for agonist binding or for the metabolite produced in cells that bind an MC-4 melanocortin receptor agonist;

(d) comparing agonist binding or metabolite production in the cells in the presence of the test compound to metabolite production in the cells in the absence of the test compound;

(e) identifying the compound as an MC-4 melanocortin receptor antagonist when less metabolite is produced in the presence of the compound than in the absence of the compound or when less agonist is bound in the presence of the compound than in the absence of the compound;

(f) administering the compound to an animal that expresses MC-4 receptor and in which cachexia is experimentally induced;

(g) comparing energy metabolism, food intake or motor activity in said animal with energy metabolism, lean body mass, food intake or motor activity in an animal in which cachexia is experimentally induced and to which the compound is not administered; and

(h) identifying the compound as an MC-4 melanocortin receptor that prevents, inhibits or ameliorates cachexia when less fat or lean body mass loss or reduction in energy metabolism, food intake or motor activity is detected in animals to which the compound has been administered than in animals to which the compound has not been administered.

8. (Withdrawn) The method of claim 7, wherein the metabolite detected in subpart (c) is cyclic AMP.

9. (Withdrawn) The method of claim 7, each of the cells further comprising a recombinant expression construct encoding a cyclic AMP responsive element (CRE) transcription factor binding site operatively linked to a nucleic acid sequence encoding a protein capable of producing a detectable metabolite.

10. (Withdrawn) The method of claim 9, wherein the nucleic acid sequence encodes .beta.-galactosidase.

11. (Withdrawn) The method of claim 9, wherein the recombinant expression construct is pCRE/.beta.-galactosidase.

12. (Withdrawn) The method of claim 9, wherein the detectable metabolite produced by the protein encoded by the recombinant expression construct is produced by binding of the test compound to the mammalian MC4-R melanocortin receptor.

13. (Withdrawn) A method according to claim 7, wherein the MC-4 receptor is a human MC-4 receptor having an amino acid sequence identified as SEQ ID NO: 2.

14. (Withdrawn) The method of claim 7, wherein the MC-4 melanocortin receptor agonist is detectably-labeled.

15. (Withdrawn) The method of claim 14 wherein the MC-4 melanocortin receptor agonist is detectably labeled with a radioisotope, a fluorescent label, a hapten, an enzymatic label or an antigenic label.